

**Amendments to the Abstract**

Please add the following abstract on a separate sheet:

**Abstract**

**Determining Cell Cycle Phase Data**

A method of determining cell cycle phase data for cells comprising at least one luminescent reporter capable of emitting radiation, the at least one luminescent reporter comprising a first luminescent reporter which is capable of being indicative of at least one cell cycle phase, said method comprising: storing classification information for classifying individual cells into different cell cycle phases using an automated classification process; receiving image data created by detecting radiation emitted by said at least one luminescent reporter; analyzing said image data to identify object areas in the image data which correspond to individual cells; analyzing said image data, on the basis of said identified object areas, to determine, for a selected cell, one or more measurements including a measurement of a parameter relating to at least a cytoplasmic component of the cell; and applying said classification information to said measurements to classify the selected cell into a selected one of a plurality of sub-populations of cells, each sub-population having cells in a different cell cycle phase.